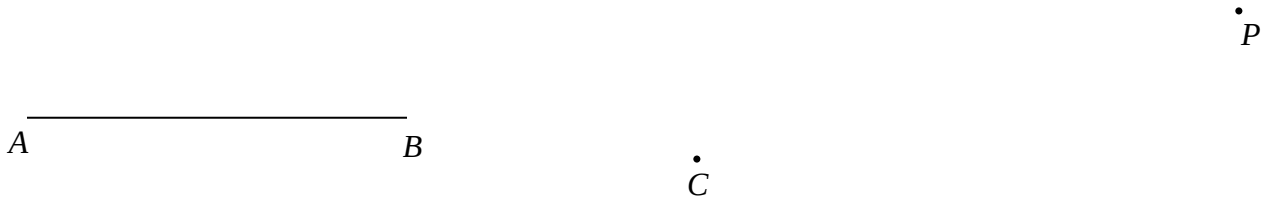
Geometry Notes: Constructions

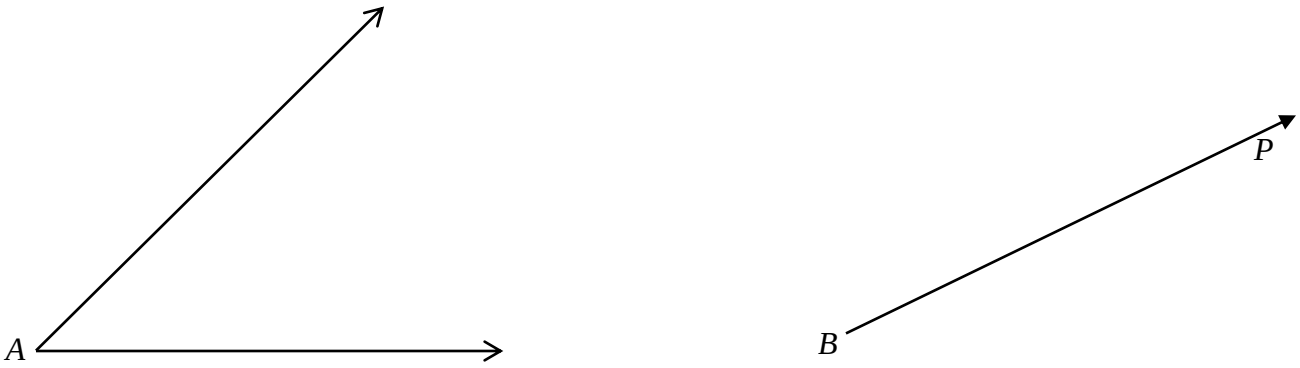
Basic ideas:

1. All constructions are done using only a compass and an (unmarked) straight-edge.
2. The following justifications are accepted
   A line segment may be drawn between any two points.
   A line segment may be extended indefinitely in either direction.
   Radii of the same circle (or arc) are congruent.
   Radii of congruent circles (or arcs of congruent circles) are congruent.

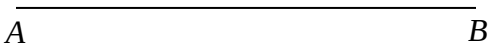
1. Construct segment $\overline{CD}$ congruent to $\overline{AB}$ and in the direction of P.



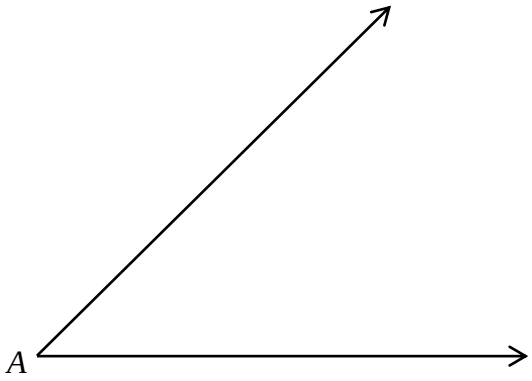
2. Construct $\angle B$ congruent to $\angle A$ with one side on ray $\overrightarrow{BP}$.



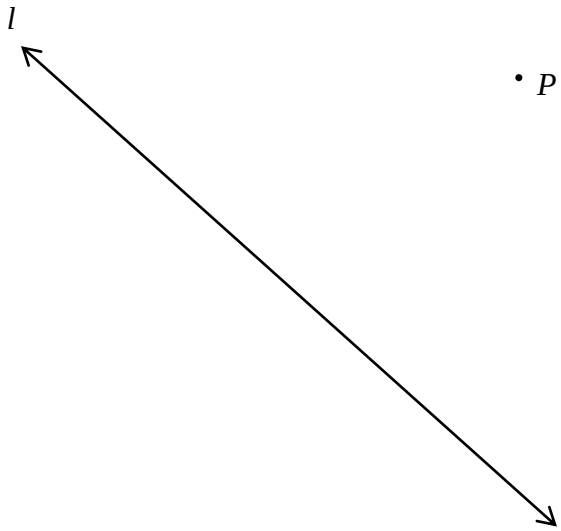
3. Construct the perpendicular bisector of $\overline{AB}$.



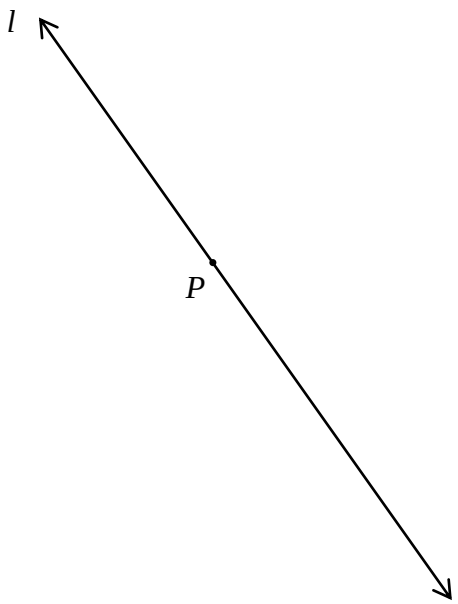
4. Bisect $\angle A$.



5. Construct a perpendicular to line l from point P not on the line.



6. Construct a perpendicular to line l at the given point P on the line.



7. Construct a parallel to line l through point P not on the line.